MEDIA RELEASE

McAlester Army Ammunition Plant
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Microscopic organisms 'eat up' production line byproducts

Microbes, which are living organisms detectable only under a microscope, play a significant role in the ammunition plant's ability to complete its mission by allowing MCAAP to treat explosive contaminated wastewaters as well as perchlorate contaminated wastewaters in an environmentally friendly manner. The microbes literally eat these contaminants.

And why not? The ammunition plant uses microbes to 'eat up' waste at the wastewater treatment plant and clean up water at one of the pinkwater treatment plants. Currently only 10 percent of MCAAP's pinkwater, but all of the perchlorate contaminated wastewater, is treated using these microbes at one of the pinkwater treatment plants. The remaining pinkwater is treated at the traditional carbon absorption treatment plant.

Although a very effective and efficient method of treating pinkwater, this carbon absorption plant produces 4,000 pounds of carbon contaminated with explosives each time a carbon column has reached its absorption capacity, resulting in between 70,000 and 90,000 pounds each year. This used carbon is a hazardous waste and must be handled, stored and disposed of accordingly.

A project to utilize these same microbes to regenerate the used carbon was developed and is a cooperative effort between the plant's environmental office, pinkwater supervisor and engineering staff along with the Joint Munitions Command Pollution Prevention Program and the U.S. Army Corps of Engineers—Construction Engineering Research Laboratory.

This pilot system started running in March and has proven to be very successful with plans to construct and implement the full-scale regeneration system in the near future. This system will save the plant around $145,000 per year as well as considerably reducing the amount of hazardous waste produced.

"What we did was take microbes from the waste water treatment plant and 'train' them to eat the explosive residue," said Ryan Williams, an environmental engineer. There is some tender loving care required for the microbes—their carbon environment has to be at a steady 98 degrees Fahrenheit and nutrients added daily to ensure their livelihood.

With the process of running the pinkwater through the carbon absorption plant, we could only use the carbon one time before we had to replace it, Williams said. “Our pilot project has shown us that using these microbes, we can at least triple the life of the carbon,” he explained.